WE CLAIM:

1. In a process for producing 1,3-propanediol where an aqueous solution of 3-hydroxypropanal is formed, the 3-hydroxypropanal is hydrogenated to form a crude 1,3-propanediol mixture comprising 1,3-propanediol, water, MW176 cyclic acetal, and high and low volatility materials, the crude 1,3-propanediol mixture is dried to produce a first overhead stream comprising water and a first distillate bottoms stream comprising 1,3-propanediol, MW176 cyclic acetal, and high and low volatility materials, and the first distillate bottoms stream is distilled to produce a second overhead stream comprising high volatility materials, a middle stream comprising 1,3-propanediol and MW176 acetal, and a second distillate bottoms stream comprising 1,3-propanediol and low volatility materials, the improvement which comprises contacting said crude 1,3-propanediol mixture, prior to drying thereof, with an acidic zeolite at about 40 to about 150ºC to convert the MW176 cyclic acetal to more volatile materials which can be easily separated from 1,3-propanediol by distillation.

2. The process of claim 1 wherein the temperature is from about 60 to about 120ºC whereby the production of color-producing impurities and dimer and higher oligomers of 1,3-propanediol is minimized.

3. In a process for producing 1,3-propanediol where an aqueous solution of 3-hydroxypropanal is formed, the 3-hydroxypropanal is hydrogenated to form a crude 1,3-propanediol mixture comprising 1,3-propanediol, water, MW176 cyclic acetal, and high and low volatility materials, the crude 1,3-propanediol mixture is dried to

produce a first overhead stream comprising water and a first distillate bottoms stream comprising 1,3-propanediol, MW176 cyclic acetal, and high and low volatility materials, and the first distillate bottoms stream is distilled to produce a second overhead stream comprising high volatility materials, a middle stream comprising 1,3-propanediol and MW176 acetal, and a second distillate bottoms stream comprising 1,3-propanediol and low volatility materials, the improvement which comprises contacting said crude 1,3-propanediol mixture, prior to drying thereof, with an acid form cationic exchange resin at ambient to about 150ºC to convert the MW176 cyclic acetal to more volatile materials which can be easily separated from 1,3-propanediol by distillation.

4. The process of claim 3 wherein the temperature is from ambient to about 100ºC.

5. In a process for producing 1,3-propanediol where an aqueous solution of 3-hydroxypropanal is formed, the 3-hydroxypropanal is hydrogenated to form a crude 1,3-propanediol mixture comprising 1,3-propanediol, water, MW176 cyclic acetal, and high and low volatility materials, the crude 1,3-propanediol mixture is dried to produce a first overhead stream comprising water and a first distillate bottoms stream comprising 1,3-propanediol, MW176 cyclic acetal, and high and low volatility materials, and the first distillate bottoms stream is distilled to produce a second overhead stream comprising high volatility materials, a middle stream comprising 1,3-propanediol and MW176 acetal, and a second distillate bottoms stream comprising 1,3-propanediol and low volatility materials, the improvement which comprises contacting said crude 1,3-propanediol mixture, prior to

drying thereof, with a soluble acid at a temperature of about 20 to about 100ºC to convert the MW176 cyclic acetal to more volatile materials which can be easily separated from 1,3-propanediol by distillation.

6. In a process for producing 1,3-propanediol where an aqueous solution of 3-hydroxypropanal is formed, the 3-hydroxypropanal is hydrogenated to form a crude 1,3-propanediol mixture comprising 1,3-propanediol, water, MW176 cyclic acetal, and high and low volatility materials, the crude 1,3-propanediol mixture is dried to produce a first overhead stream comprising water and a first distillate bottoms stream comprising 1,3-propanediol, MW176 cyclic acetal, and high and low volatility materials, and the first distillate bottoms stream is distilled to produce a second overhead stream comprising high volatility materials, a middle stream comprising 1,3-propanediol and MW176 acetal, and a second distillate bottoms stream comprising 1,3-propanediol and low volatility materials, the improvement which comprises contacting said first distillate bottoms stream, prior to distillation thereof, with an acidic zeolite at about 40 to about 150ºC to convert the MW176 cyclic acetal to more volatile materials which can be easily separated from 1,3-propanediol by distillation.

7. The process of claim 6 wherein the temperature is from about 60 to about 120ºC whereby the production of color-producing impurities and dimer and higher oligomers of 1,3-propanediol is minimized.

8. In a process for producing 1,3-propanediol where an aqueous solution of 3-hydroxypropanal is formed, the 3-hydroxypropanal is hydrogenated to form a crude 1,3-

propanediol mixture comprising 1,3-propanediol, water, MW176 cyclic acetal, and high and low volatility materials, the crude 1,3-propanediol mixture is dried to produce a first overhead stream comprising water and a first distillate bottoms stream comprising 1,3-propanediol, MW176 cyclic acetal, and high and low volatility materials, and the first distillate bottoms stream is distilled to produce a second overhead stream comprising high volatility materials, a middle stream comprising 1,3-propanediol and MW176 acetal, and a second distillate bottoms stream comprising 1,3-propanediol and low volatility materials, the improvement which comprises contacting said first distillate bottoms stream, prior to distillation thereof, with an acid form cationic exchange resin at ambient to about 150ºC to convert the MW176 cyclic acetal to more volatile materials which can be easily separated from 1,3-propanediol by distillation.

9. The process of claim 8 wherein the temperature is from ambient to about 100ºC.

10. In a process for producing 1,3-propanediol where an aqueous solution of 3-hydroxypropanal is formed, the 3-hydroxypropanal is hydrogenated to form a crude 1,3-propanediol mixture comprising 1,3-propanediol, water, MW176 cyclic acetal, and high and low volatility materials, the crude 1,3-propanediol mixture is dried to produce a first overhead stream comprising water and a first distillate bottoms stream comprising 1,3-propanediol, MW176 cyclic acetal, and high and low volatility materials, and the first distillate bottoms stream is distilled to produce a second overhead stream comprising high volatility materials, a middle stream comprising 1,3-propanediol and MW176 acetal, and a second

distillate bottoms stream comprising 1,3-propanediol and low volatility materials, the improvement which comprises contacting said first distillate bottoms stream, prior to distillation thereof, with a soluble acid at a temperature of about 20 to about 100ºC to convert the MW176 cyclic acetal to more volatile materials which can be easily separated from 1,3-propanediol by distillation.

11. In a process for producing 1,3-propanediol where an aqueous solution of 3-hydroxypropanal is formed, the 3-hydroxypropanal is hydrogenated to form a crude 1,3-propanediol mixture comprising 1,3-propanediol, water, MW176 cyclic acetal, and high and low volatility materials, the crude 1,3-propanediol mixture is dried to produce a first overhead stream comprising water and a first distillate bottoms stream comprising 1,3-propanediol, MW176 cyclic acetal, and high and low volatility materials, and the first distillate bottoms stream is distilled to produce a second overhead stream comprising high volatility materials, a middle stream comprising 1,3-propanediol and MW176 acetal, and a second distillate bottoms stream comprising 1,3-propanediol and low volatility materials, the improvement which comprises contacting said middle stream with an acidic zeolite at about 40 to about 150ºC to convert the MW176 cyclic acetal to more volatile materials which can be easily separated from 1,3-propanediol by distillation.

12. The process of claim 11 wherein the temperature is from about 60 to about 120ºC whereby the production of color-producing impurities and dimer and higher oligomers of 1,3-propanediol is minimized.

13. In a process for producing 1,3-propanediol where an aqueous solution of 3-hydroxypropanal is formed, the 3-hydroxypropanal is hydrogenated to form a crude 1,3-propanediol mixture comprising 1,3-propanediol, water, MW176 cyclic acetal, and high and low volatility materials, the crude 1,3-propanediol mixture is dried to produce a first overhead stream comprising water and a first distillate bottoms stream comprising 1,3-propanediol, MW176 cyclic acetal, and high and low volatility materials, and the first distillate bottoms stream is distilled to produce a second overhead stream comprising high volatility materials, a middle stream comprising 1,3-propanediol and MW176 acetal, and a second distillate bottoms stream comprising 1,3-propanediol and low volatility materials, the improvement which comprises contacting said middle stream with an acid form cationic exchange resin at ambient to about 150ºC to convert the MW176 cyclic acetal to more volatile materials which can be easily separated from 1,3-propanediol by distillation.

14. The process of claim 13 wherein the temperature is from ambient to about 100ºC.

15. In a process for producing 1,3-propanediol where an aqueous solution of 3-hydroxypropanal is formed, the 3-hydroxypropanal is hydrogenated to form a crude 1,3-propanediol mixture comprising 1,3-propanediol, water, MW176 cyclic acetal, and high and low volatility materials, the crude 1,3-propanediol mixture is dried to produce a first overhead stream comprising water and a first distillate bottoms stream comprising 1,3-propanediol, MW176 cyclic acetal, and high and low volatility materials, and the first distillate bottoms stream is distilled to produce a second overhead stream

comprising high volatility materials, a middle stream comprising 1,3-propanediol and MW176 acetal, and a second distillate bottoms stream comprising 1,3-propanediol and low volatility materials, the improvement which comprises contacting said middle stream with a soluble acid at a temperature of about 20 to about 100°C to convert the MW176 cyclic acetal to more volatile materials which can be easily separated from 1,3-propanediol by distillation.